

[illegible]

```
FFFFFFFFF 000000 RRRRRRR IIIIII NN NN IIIIII UU UU NN NN DDDDDDD
FFFFFFFFF 000000 RRRRRRR IIIIII NN NN IIIIII UU UU NN NN DDDDDDD
FF 00 00 RR RR RR I I NN NN I I UU UU NN NN DD DD
FF 00 00 RR RR RR I I NN NN I I UU UU NN NN DD DD
FF 00 00 RR RR RR I I NN NN I I UU UU NN NN DD DD
FFFFFFFF 00 00 RRRRRRR I I NN NN I I UU UU NN NN DD DD
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FF 000000 RR RR RR I I NN NN I I UU UU NN NN DD DD
FF 000000 RR RR RR I I NN NN I I UU UU NN NN DD DD
LL IIIIII SSSSSSS
LL IIIIII SSSSSSS
LL I I SS
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LL I I SSSSSS
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LL I I SS
LL I I SS
LL I I SS
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LLLLLLLLLL IIIIII SSSSSSS
LLLLLLLLLL IIIIII SSSSSSS
```

```

0001 0 %TITLE 'FOR$INIUND - Initialize Fortran underflow handling'
0002 0 MODULE FOR$INIUND (
0003 0 IDENT = '1-001' ! File: FORINIUND.B32 Edit: JAW1001
0004 0 ) =
0005 1 BEGIN
0006 1 ++
0007 1
0008 1 *****
0009 1 *
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0027 1 *
0028 1 *
0029 1 *****
0030 1
0031 1
0032 1 FACILITY: Fortran Support Library
0033 1
0034 1 ABSTRACT:
0035 1
0036 1 This module contains a condition handler for floating underflow
0037 1 exceptions, an exit handler to report the number of underflows
0038 1 at image exit, and an initialization procedure which establishes
0039 1 the condition handler for Fortran main programs.
0040 1
0041 1 ENVIRONMENT: Runs at any access mode - AST reentrant
0042 1
0043 1 AUTHOR: John A. Wheeler, CREATION DATE: 21-Aug-1981
0044 1
0045 1 MODIFIED BY:
0046 1
0047 1 1-001 - Original. JAW 21-Aug-1981
0048 1 --
0049 1

```

```
51 0050 1 %SBTTL 'Declarations'
52 0051 1
53 0052 1 SWITCHES:
54 0053 1
55 0054 1
56 0055 1 SWITCHES ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL = WORD_RELATIVE);
57 0056 1
58 0057 1
59 0058 1 LINKAGES:
60 0059 1
61 0060 1 NONE
62 0061 1
63 0062 1 TABLE OF CONTENTS:
64 0063 1
65 0064 1
66 0065 1 FORWARD ROUTINE
67 0066 1 FOR$INIT_UNDER;
68 0067 1
69 0068 1
70 0069 1 INCLUDE FILES:
71 0070 1
72 0071 1
73 0072 1 REQUIRE 'RTLIN:RTLPSECT';
74 0167 1
75 0168 1
76 0169 1 MACROS:
77 0170 1
78 0171 1 NONE
79 0172 1
80 0173 1 EQUATED SYMBOLS:
81 0174 1
82 0175 1 NONE
83 0176 1
84 0177 1 FIELDS:
85 0178 1
86 0179 1 NONE
87 0180 1
88 0181 1 PSECTS:
89 0182 1
90 0183 1
91 0184 1 PSECT
92 0185 1 PLIT = LIB$INITIALIZD ( READ, NOWRITE, NOEXECUTE, NOSHARE, NOPIC,
93 0186 1 CONCATENATE, GLOBAL, ALIGN (2), ADDRESSING_MODE (GENERAL) );
94 0187 1
95 0188 1
96 0189 1 !+ Make LIB$INITIALIZD psect contribution so LIB$INITIALIZE procedure
97 0190 1 will call FOR$INIT_UNDER, which will establish FOR$UNDERFLOW_HANDLER
98 0191 1 as default handler and make coroutine call back. LIB$INITIALIZD is
99 0192 1 used so that FOR$INIT_UNDER will be called before COM_STARTUP, whose
100 0193 1 address is in LIB$INITIALIZE psect.
101 0194 1 !-
102 0195 1
103 0196 1 BIND
104 0197 1 VECT = UPLIT (FOR$INIT_UNDER);
105 0198 1
106 0199 1 !+
107 0200 1 ! Now declare usual PSECTS
```

FOR\$INIUND
1-001

FOR\$INIUND - Initialize Fortran underflow handl
Declarations

E 1
16-Sep-1984 00:26:58
14-Sep-1984 12:32:01

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[FORRTL.SRC]FORINIUND.B32;1

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```

: 108      0201  1  !-
: 109      0202  1
: 110      0203  1  DECLARE_PSECTS (FOR);
: 111      0204  1
: 112      0205  1
: 113      0206  1  ! OWN STORAGE:
: 114      0207  1
: 115      0208  1  ! NONE
: 116      0209  1
: 117      0210  1  ! EXTERNAL REFERENCES:
: 118      0211  1
: 119      0212  1
: 120      0213  1  EXTERNAL ROUTINE
: 121      0214  1  ! LIB$INITIALIZE,
: 122      0215  1  ! FOR$UNDERFLOW_HANDLER;
: 123      0216  1
: 124      0217  1  !
```

! Declare PSECTs for FOR\$ facility

```

126 0218 1 %SBTTL 'FOR$INIT_UNDER - Initialize underflow handling'
127 0219 1 GLOBAL ROUTINE FOR$INIT_UNDER (
128 0220 1     CO_ROUT_INIT,
129 0221 1     CLI_CO_ROUT
130 0222 1 ) =
131 0223 1
132 0224 1 ++
133 0225 1 FUNCTIONAL DESCRIPTION:
134 0226 1
135 0227 1     This routine is called by LIB$INITIALIZE during image startup.
136 0228 1     It establishes FOR$UNDERFLOW_HANDLER as a default underflow
137 0229 1     exception handler and makes a coroutine call back to LIB$INITIALIZE.
138 0230 1
139 0231 1 CALLING SEQUENCE:
140 0232 1
141 0233 1     ret_status.wlc.v = FOR$INIT_UNDER (co_rout_init.ra.v,
142 0234 1                                     cli_co_rout.ra.v)
143 0235 1
144 0236 1 FORMAL PARAMETERS:
145 0237 1
146 0238 1     co_rout_init                                Address of coroutine within
147 0239 1                                                  LIB$INITIALIZE
148 0240 1
149 0241 1     cli_co_rout                                Address of coroutine within CLI
150 0242 1                                                  (not used)
151 0243 1
152 0244 1 IMPLICIT INPUTS:
153 0245 1
154 0246 1     NONE
155 0247 1
156 0248 1 IMPLICIT OUTPUTS:
157 0249 1
158 0250 1     NONE
159 0251 1
160 0252 1 COMPLETION STATUS: (or ROUTINE VALUE:)
161 0253 1
162 0254 1     As returned by main program via LIB$INITIALIZE.
163 0255 1
164 0256 1 SIDE EFFECTS:
165 0257 1
166 0258 1     Makes a coroutine call back to LIB$INITIALIZE, thereby leaving
167 0259 1     the current frame on the stack.
168 0260 1
169 0261 1 --
170 0262 1
171 0263 2 BEGIN
172 0264 2
173 0265 2     ENABLE
174 0266 2         FOR$UNDERFLOW_HANDLER;
175 0267 2
176 0268 2     ++
177 0269 2     Make coroutine call back to LIB$INITIALIZE.
178 0270 2     --
179 0271 2
180 0272 2     RETURN (.CO_ROUT_INIT) ();
181 0273 2
182 0274 1 END;

```

FOR\$INIUND
1-001

FOR\$INIUND - Initialize Fortran underflow handl
FOR\$INIT_UNDER - Initialize underflow handling

G 1
16-Sep-1984 00:26:58
14-Sep-1984 12:32:01

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[FORRTL.SRC]FORINIUND.B32;1

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```

;
; .TITLE FOR$INIUND FOR$INIUND - Initialize Fortran unde
;                               rflow handl
; .IDENT \1-001\
; .PSECT LIB$INITIALIZD_,NOWRT,NOEXE, GBL,2
; .ADDRESS FOR$INIT_UNDER
;
;                               VECT=
;                               P.AAA
; .EXTRN LIB$INITIALIZE, FOR$UNDERFLOW_HANDLER
; .PSECT _FOR$CODE,NOWRT, SHR, PIC,2
; .ENTRY FOR$INIT_UNDER, Save nothing
; .MOVAL 1$, (FP)
; .CALLS #0, @CO_ROUT_INIT
; .RET
; .WORD Save nothing
; .CLRL -(SP)
; .PUSHL SP
; .MOVQ 4(AP), -(SP)
; .CALLS #3, FOR$UNDERFLOW_HANDLER
; .RET
;
00000000' 00000 P.AAA:
;
04 6D 0006 CF DE 00002
BC 00 FB 00007
04 0000B
0000 0000C 1$:
7E D4 0000E
5E DD 00010
AC 7D 00012
00000000G 00 03 FB 00016
04 0001D
```

; Routine Size: 30 bytes, Routine Base: _FOR\$CODE + 0000

```

; 183 0275 1
; 184 0276 1 END
; 185 0277 0 ELUDOM
;
! End of module FOR$INIUND
```

PSECT SUMMARY

Name	Bytes	Attributes
LIB\$INITIALIZD_	4	NOVEC,NOWRT, RD ,NOEXE,NOSHR, GBL, REL, CON,NOPIC,ALIGN(2)
_FOR\$CODE	30	NOVEC,NOWRT, RD , EXE, SHR, LCL, REL, CON, PIC,ALIGN(2)

COMMAND QUALIFIERS

```

;
; BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LISS$:FORINIUND/OBJ=OBJ$:FORINIUND MSRC$:FORINIUND/UPDATE=(ENH$:FORINIUND
; )
```

; Size: 30 code + 4 data bytes

FOR\$INIUND
1-001

FOR\$INIUND - Initialize Fortran underflow handl^{H 1}
FOR\$INIT_UNDER - Initialize underflow handling 16-Sep-1984 00:26:58

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: Run Time: 00:02.0
: Elapsed Time: 00:07.4
: Lines/CPU Min: 8436
: Lexemes/CPU-Min: 18761
: Memory Used: 17 pages
: Compilation Complete

0181 AH-BT13A-SE
VAX/VMS V4.0

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FORINTUND
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FORLIB
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